

of what Dioscurides calls κάλαμος ὁ εὐώδης, i. e., sweet flag or calamus, one of the best varieties of which was imported from India<sup>1039</sup>. But caution is required since a plant of this name grew in the marshes along the Red Sea coast<sup>1040</sup>. Other supposed imports pose similar problems. Zenon's faithful hound Τάυρων is described as Ἰνδόν in a papyrus copy of the epitaph from his grave<sup>1041</sup>. Indian dogs occur both in our literary sources and in art<sup>1042</sup> but no more than a breed of dog need be indicated by the ethnic<sup>1043</sup>. Tauron may be a locally bred example of a breed already found in Babylon in Herodotus' day<sup>1044</sup>.

Six imported spices appear to have been widely used in various parts of the Roman Empire: malabathrum<sup>1045</sup>, pepper, frankincense, myrrh, cassia, and cinnamon. Pepper, definitely an Indian product, ranks among the most important<sup>1046</sup>. Literary references, particularly in Apicius<sup>1047</sup>, and finds of pepper shakers<sup>1048</sup> as well as the numerous references in papyri<sup>1049</sup> attest to the widespread use of this Indian product. Four other spices are not products of South Asia. Frankincense and myrrh came from Southwest Arabia, particularly the regions of Dofar and Hadhramaut<sup>1050</sup> and some varieties grew in East Africa<sup>1051</sup>. The use of these products in the Mediterranean goes back well into the Dynastic period<sup>1052</sup>. The expedition of Queen Hatshepsut recorded on the reliefs and inscription from Der el-Bahri<sup>1053</sup> seems to have been intent on fetching these products<sup>1054</sup> from Southwest Arabia, but the exact geography of that venture is still the source of vigorous controversy<sup>1055</sup>. The Pharaonic effort to transplant frankincense trees from their native habitat to Egypt<sup>1056</sup> may have been imitated by Ptolemy Philadelphus, but botanists give neither enterprise much chance of success<sup>1057</sup>.

Two closely associated spices pose particular problems. It is common ground among almost all scholars who write on the subject that both spices originated somewhere in South Asia, whether India, Ceylon, Indonesia, or Southern China<sup>1058</sup>. Yet with the exception of a single passage in Strabo all of our ancient sources are unanimous in attributing both cassia and cinnamon to Arabia and East Africa<sup>1059</sup>. The communis opinio holds that the merchants of Southwest Arabia in the period of the 'Sabaean thalassocracy' gained a monopoly not only on the import of both spices, but also on the knowledge of their true origin, and that they continued to retain this monopoly throughout the Roman period<sup>1060</sup>. Since, however, cinnamon is already mentioned in Egyptian texts of the second millennium B. C.<sup>1061</sup>, it was thought necessary to attribute such early commerce to the Phoenicians and more recently to the Indonesians<sup>1062</sup>. Undaunted by the fact that the identification of many of the substances mentioned in early Egyptian documents is uncertain<sup>1063</sup>, MILLER proposed that cinnamon and cassia were carried from the islands of Southeast Asia to the coast of East Africa near Madagascar. The spices were then transported overland to the ports of Somalia<sup>1064</sup>. This rather bizarre theory has its origins in a strange tale told by Pliny<sup>1065</sup> and in the widely accepted view that Madagascar was settled by Indonesians in the early years of the present era<sup>1066</sup>. The type of evidence used by JONES,

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upon whose work MILLER, apparently without much further enquiry, bases his theories, is primarily anthropological and undatable<sup>1067</sup>. The linguistic evidence has been analysed in detail; research to date points to a derivation of Malagasy from Malayo-Polynesian before any significant Sanskritization<sup>1068</sup>. In the case of Malayan origins this would fix an approximate terminus ante quem of the fifth or sixth century<sup>1169</sup>. On the other hand, if we assume the migrants came from Sumatra, Java or Borneo, the time is considerably later<sup>1070</sup>. The discovery of a quadrangular stone adze east of Ankazobe does not significantly narrow down the chronological options noted above<sup>1071</sup>. Nor are the bead finds of much assistance<sup>1072</sup>. Other comparative material of an anthropological or ethnographic nature, such as the similarity of blood types<sup>1073</sup> or the parallels in the use and construction of the xylophone and outrigger canoe<sup>1074</sup>, are too imprecise to be of assistance in a historical reconstruction.

It is also important to remember that no scholar apart from MILLER has seen this migration as a commercial venture<sup>1075</sup>. An ever increasing amount of archaeological evidence from the islands of the Pacific indicates that the islanders using large outrigger canoes were able to perform voyages of as much as 2,000 miles<sup>1076</sup>. No known voyage equals the 3,500 miles of open ocean which lie between the most westerly islands of Indonesia and Madagascar<sup>1077</sup>. More important, however, is the determination that the great voyages of the Polynesians were made primarily in search of food and the necessities of life; large-scale commerce does not figure as a significant motive<sup>1078</sup>. The most that may therefore be said is that an unknown number of Indonesians deliberately or more likely accidentally<sup>1079</sup> were carried by wind and currents to Madagascar where they settled.

The whole notion of a secret Monsoon and cinnamon trade strikes one as rather absurd<sup>1080</sup>. It is necessary to assume that South Arabia obtained such a monopoly on both navigational knowledge and the spice long after the merchants of the Persian Gulf were already frequenting Indian waters<sup>1081</sup>. Furthermore, one must assume that Arabian ships reached Southeast Asia centuries before Indian vessels made the trip<sup>1082</sup>. Archaeologically the evidence of Indian contact with Southeast Asia can scarcely be put before the present era<sup>1083</sup>, and the main thrust in Western Malaya does not appear to come until the third to sixth centuries<sup>1084</sup>. Even at commercial centres such as Oc-eo the evidence of Indian contact is quite limited<sup>1085</sup>. Such a late date for Indian penetration of Southeast Asia is also confirmed by references in Chinese literary sources to this region<sup>1086</sup>. That the native cultures of some parts of Southeast Asia were nautically more advanced than their Chinese neighbours remains a distinct possibility<sup>1087</sup>. Early Chinese travellers used such foreign vessels<sup>1088</sup>, but the only other literary evidence for their possible existence is a disputed passage in the 'Periplus'<sup>1089</sup>. The date of the earliest Chinese voyages to the West remains controversial due to the difficulties in identifying toponyms mentioned in Chinese texts<sup>1090</sup>. The account of a voyage in the 'Han-shu' to *Huang shih* in A.D. 2<sup>1091</sup> still is the only widely accepted reference to an early Chinese voyage to the West,

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but even this is not entirely convincing<sup>1092</sup>. Archaeologically there are few traces of Chinese imports in Indonesia and India until the T'ang period<sup>1093</sup>.

The whole discussion of the early cinnamon trade and its sources has become inexorably intertwined with the hypothesis, held by many to be an established fact, that the Sabaeen discovery and use of the Southwest Monsoon for voyages to India and Southeast Asia greatly antedates the arrival of the Greeks on the Indian Ocean<sup>1094</sup>. In the nineteenth century it was held that the port of Ophir frequented by King Solomon's ships was in India or beyond<sup>1095</sup> and that the Phoenicians were engaged in a sea trade with China<sup>1096</sup>. Although both the latter hypotheses have long been shown to be pure fabrication, variations on this theme have survived in superficially scholarly works on the spice trade<sup>1097</sup>. The 'Sabaeen thalassocracy' hypothesis, which is intellectually the successor of the above-mentioned theories, still flourishes today and continues to gain new converts<sup>1098</sup>. The archaeological evidence once cited to support such speculation has now largely melted away. The glass beads found at Kota Tinggi and Johore Lama, identified by BECK as including Mediterranean specimens of the seventh century B. C., were considered reliable evidence of early commercial contacts between Malaya and the West<sup>1099</sup>. The entire problem of the discovery of glass beads at various Southeast Asian sites has been restudied. It is now understood that beads could be used or reused over many centuries<sup>1100</sup> and that their discovery at any given site is of little chronological value<sup>1101</sup>. The sites of Southeast Asia and Indonesia are currently dated primarily on the basis of imported Chinese ceramics and subsequent investigation has shown that Tikam Batu and other sites originally excavated by QUARITCH WALES must be dated to a considerably later period<sup>1102</sup>. The results obtained from a re-examination of the archaeological evidence point to the conclusion that little glass was imported anywhere in Indo-China and Indonesia before the Islamic period in the West and the T'ang dynasty in the East<sup>1103</sup>. Furthermore, the chemical analysis of glass beads, to some extent more accurate than the subjective analysis of shapes<sup>1104</sup>, has shown that both Chinese and Western beads occur in this area but little can yet be said about their geographic origins<sup>1105</sup>. Even distinctive manufacturing techniques such as the layering of glass and gold leaf is attested for both Egypt and India<sup>1106</sup>. Apart from glass there remain only some enigmatic sherds. Found in a nonscientific and unstratified excavation together with Malayan Neolithic ware at Bukit Tengu Lemba in Perlis, these sherds, of distinctive texture and shape, were identified by CORBETT as being Greek pottery of the late fifth or early fourth centuries B. C.<sup>1107</sup>. No comparable material has been found anywhere else in Southeast Asia. An isolated and unique find of questionable identity and coming from an unscientific excavation is of no historical value<sup>1108</sup>. Although undoubtedly a curiosity, it cannot alone be used as evidence of early commerce between Malaya and the West<sup>1109</sup>. Other archaeological or ethnographic material which has been brought forward is purely speculative (or worse) and does not merit detailed consideration<sup>1110</sup>.

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lost or buried, could be excavated and re-used by treasure-hunting natives, or could be imitated long after the date of manufacture of the originals<sup>1648</sup>. Excavations at Southeast Asian and Indonesian sites in the past three decades have revealed a completely different picture from that accepted a generation ago. With the exception of the bead finds from Oc-eo and sites dependent on it<sup>1649</sup>, where Indian imports and local production complicate the picture<sup>1650</sup>, all of our material can be eliminated from consideration in studying Roman trade. The bead finds of Vietnam<sup>1651</sup> all come from sites showing Chinese settlement or influence and date to a period of Chinese expansion and migration into the area<sup>1652</sup>. One may reasonably suppose that China is the immediate land of origin of these glass beads<sup>1653</sup>. At most other sites in Malaya<sup>1654</sup>, Java<sup>1655</sup>, Sumatra<sup>1656</sup>, and particularly in the well stratified excavations of the Niah caves and Sarawak Delta of Southwest Borneo<sup>1657</sup>, as well as in Formosa<sup>1658</sup> and in the Philippines<sup>1659</sup>, the time of arrival of what were once described as 'Roman' beads coincides approximately with the introduction of iron and the use of imported T'ang through Sung ceramics and stoneware<sup>1660</sup>. The origin of many of these beads is generally assumed to be similar to that of the Near Eastern glass found at several large seventh to fourteenth century entrepôt sites in Malaya<sup>1661</sup>. The earlier portions of this period overlap with an era of Indian cultural influence, the impact of which is relatively slight in areas such as Borneo, but more intense and earlier in Thailand<sup>1662</sup>. This stage, too, is characterized by imported goods, but in considerably smaller quantity, and at some sites glass beads may have arrived at this time<sup>1663</sup>.

The Indians traded extensively with Southeast Asia in the early centuries of the Christian era<sup>1664</sup> and by the fourth and fifth centuries or later had settled in Malaya<sup>1665</sup> and Indo-China<sup>1666</sup>, as well as in the islands of Indonesia<sup>1667</sup>, even as far as Borneo<sup>1668</sup>, in sufficient numbers to affect permanently the cultural development of these regions<sup>1669</sup>. The motivation behind this trade and migration still remains obscure. The search for gold and other metals is generally regarded by modern scholars as a major cause<sup>1670</sup>, but ancient tradition places some emphasis on political exiles<sup>1671</sup>. It must be remembered that it is quite possible that many, if not all, of the Roman artifacts found in Indo-China may have been brought there not by traders but by Indian immigrants from those areas of India to which Roman goods were imported<sup>1672</sup>. Nor is the chronology of this movement secure. Indian sites in Southeast Asia are difficult to date, since early structures may have been of wood and have completely disappeared, and because the discovery of artifacts of early manufacture, particularly Buddhist images, does not preclude the considerably later importation of these items into this area<sup>1673</sup>. The earliest inscriptions are dated palaeographically and thus are of limited chronological importance<sup>1674</sup>. Dated inscriptions only begin to be attested in the sixth century<sup>1675</sup>. Indian literature, because of the insecure date of many works, is of little help and the date suggested above is the most acceptable period for the main bulk of Indian migration to this region<sup>1676</sup>. Such a migration would have been preceded

by several centuries of commercial contact<sup>1677</sup>. Future archaeological discoveries may, of course, lower this date somewhat, but the most recent explorations of sites in Southern Thailand<sup>1678</sup>, and in Kedah<sup>1679</sup>, Malaya<sup>1680</sup> as well as Borneo<sup>1681</sup> have tended to reveal a picture similar to that discussed above in reference to the diffusion of glass beads: whatever traces of Indian influence are found tend to be approximately contemporary with or only slightly earlier than the arrival of T'ang ceramics and stoneware in the area<sup>1682</sup>. Thus, at present, theories about Indian migrations to Southeast Asia in the earliest centuries of the Christian era must rest on Chinese literary evidence<sup>1683</sup> and on the results of the Oc-eo excavations<sup>1684</sup>.

The nature and extent of the indigenous cultures of Southeast Asia contemporary with the Roman Empire is still in the process of being determined<sup>1685</sup>. It is clear from Chinese literature that the southern neighbours of the Han were considerably more nautically advanced than the Chinese themselves<sup>1686</sup>. The indigenous Dong-son Bronze Age culture was widespread throughout Southeast Asia<sup>1687</sup> and at least in some areas was not replaced by the Iron Age until well into the Christian era<sup>1688</sup>. Whether the supposed maritime empire of Funan<sup>1689</sup> rose under the stimulus of Indian or Chinese organizational expertise, or whether it was a primarily indigenous growth, is still not clear<sup>1690</sup>. As a result of the new excavations of Non Nok Tha and the surprisingly early Bronze Age culture which this site seems to have revealed<sup>1691</sup>, there is now some doubt if all of this region was economically and culturally less advanced than Northern India and China<sup>1692</sup>.

Apart from the few artifacts mentioned above<sup>1693</sup>, there is no trace that Roman trade or culture had any perceivable impact on this region. In fact, since all of these objects could just as easily have arrived with Indian settlers or merchants, we are left with only literary evidence, both Chinese and Roman<sup>1694</sup>, for the infrequent visits of Roman merchants to this part of the world. There exists to date no evidence that Roman ships regularly frequented the ports of Funan or southern China as some have supposed<sup>1695</sup>.

### V. Conclusion

The four studies above highlight some of the major problems encountered not only in dealing with Roman commerce with the East, but also in the study of ancient economic history generally. A wide variety of evidence exists — literary, epigraphic, archaeological, numismatic, linguistic — all of which must be taken into consideration and carefully examined if meaningful conclusions are to be reached. In the foregoing no effort has been made to enumerate and evaluate all of the evidence available for our subject — such a task requires more time and space than is presently at my disposal — but it is hoped that several key problem areas have been elucidated. Most important, it has, I think, become clear that the history of

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